

United States Department of the Interior  
National Park Service

# NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

## 1. Name of Property

historic name: Mann Gulch Wildfire Historic District

other name/site number: 24LC1160

## 2. Location

street & number: Mann Gulch, a tributary of the Missouri River, Helena National Forest

not for publication: na  
vicinity: X

city/town: Helena

state: Montana

code: MT

county: Lewis and Clark

code: 049

zip code: 59601

## 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this X nomination    request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets    does not meet the National Register Criteria. I recommend that this property be considered significant    nationally X statewide X locally.

Signature of certifying official/title

Date

State or Federal agency or bureau

(See continuation sheet for additional comments.)

In my opinion, the property X meets    does not meet the National Register criteria.

Signature of commenting or other official

Date

State or Federal agency and bureau

## 4. National Park Service Certification

I, hereby certify that this property is:

- entered in the National Register  
   see continuation sheet  
   determined eligible for the National Register  
   see continuation sheet  
   determined not eligible for the National Register  
   see continuation sheet  
   removed from the National Register  
   see continuation sheet  
   other (explain):

Signature of the Keeper

Date of Action

## 5. Classification

Ownership of Property: Public - Federal	Number of Resources within Property	
Category of Property: District	Contributing	Noncontributing
Number of contributing resources previously listed in the National Register: na	<u>1</u>	<u>1</u> building(s)
Name of related multiple property listing: na	<u>1</u>	<u>1</u> sites
	<u>1</u>	<u>1</u> structures
	<u>1</u>	<u>26</u> objects
	<u>2</u>	<u>28</u> TOTAL

## 6. Function or Use

Historic Functions:

LANDSCAPE/Natural Feature

Current Functions:

LANDSCAPE/Natural Feature

## 7. Description

Architectural Classification: NA

Materials:

foundation: NA

walls: NA

roof: NA

other: NA

## Narrative Description

The Mann Gulch Wildfire Historic District (24LC1160) is located adjacent to the Missouri River in the Big Belt Mountains of west-central Montana. The Missouri River here is impounded by Holter Dam, forming Holter Lake, so that access to Mann Gulch is primarily by boat. This constricted canyon area is known as the Gates of the Mountains. The entire District is located on lands administered by the USDA Forest Service, Helena Ranger District, Helena National Forest. It lies approximately 20 miles north of the city of Helena. The Historic District includes Mann Gulch, the mouth of Meriwether Canyon to the south, and the bottom of Rescue Gulch to the north.

## Present and Historical Appearance

Mann Gulch appears much the same as it did in 1949, when a wildfire claimed the lives of thirteen firefighters. Mann Gulch is a minor side-drainage on the east side of the Missouri River (Holter Lake). Its northeast-southwest orientation exposes it to prevailing summer winds. Except for spring snowmelt, the gulch is waterless. The gulch is narrow (about 200 yards) at its mouth but is one half mile in width at the top of the gulch some 1.5 miles east of the Missouri River. Slopes within the gulch range from 15 percent at the mouth to 75 percent at the head of the gulch and ridgeline. A dense stand of Douglas fir, shrubs and grass grow at the gulch mouth next the Missouri River. The 1949 fire did not burn here. The north-facing slope was burned during the wildfire and today is covered with immature and mature ponderosa pine, Douglas fir, juniper

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and grasses. The south-facing slope was significantly changed by the wildfire and is mostly devoid of trees. Tree snags, dead and downed timber, juniper, sagebrush, cheat grass, bunch grass and fescue comprise the vegetation on this slope. The white-washed concrete crosses and the granite markers of the thirteen fallen fighters dot the south slope at the upper reaches of Mann Gulch. Soils in the Big Belt Mountains are rocky and unstable; scree slopes and cobbles hidden under dense grass make walking difficult along the steep, upper slopes of Mann Gulch. A narrow game trail winds up the gulch bottom to the ridgetop. The tread has become an informal foot-trail for Mann Gulch visitors, and has experienced a significant increase in usage since the early 1990's as a result of the publication of Norman Maclean's (1992) popular book about the wildfire tragedy.

Meriwether Canyon is the next drainage south of Mann Gulch. It is a steep-walled, box canyon characterized by limestone cliffs and ponderosa pine and Douglas fir forest. Meriwether Picnic Area and an administrative cabin built in 1968 are located at the canyon mouth. The administrative cabin replaced a small cabin used in 1949 by a Forest Service fire guard and one of the fire's victims, Jim Harrison. A trail begins at the mouth of Meriwether Canyon and leads north into Mann Gulch and the adjoining Gates of the Mountains Wilderness. Rescue Gulch is the next drainage north of Mann Gulch and was partially burned by the 1949 fire. It is a small, relatively open canyon next to a deep bend in the Missouri River. The broad, gentle cove in Rescue Gulch was used, as the name implies, as the staging area for removing the fire victims.

### Description of Resources

Mann Gulch, Rescue Gulch, and Mouth of Meriwether Canyon (contributing site)

#### Mann Gulch

The Mann Gulch wildfire occurred primarily within Mann Gulch and is where the firefighters were dropped, scouted the fire, met up with fire guard Harrison, attempted to escape the conflagration, and lost their lives and/or were rescued. The concrete crosses and granite markers of the fallen fighters are located here. The concrete crosses were placed in Mann Gulch by smokejumpers in 1950; the granite markers were placed alongside the crosses in 1997. Artifacts relating to firefighting (i.e., lunch cans, shovels, pulaskis) and rescue efforts (i.e., glass plasma bottles) are located in the cargo drop and attempted escape area on the south-facing slope. Some artifacts have been mapped and removed to prevent artifact theft but others remain in place.

#### Rescue Gulch

The defile in the vertical cliffs at the top of the ridge line through which two of the fire survivors climbed, and the rock slides which saved their lives, are distinguishable features of Rescue Gulch. The cove in the Missouri River at the gulch mouth where rescue operations were staged is unchanged. Rescue Gulch's name invokes the importance of this small gulch in the events that unfolded during the Mann Gulch wildfire.

#### Mouth of Meriwether Canyon

In 1949, a fire guard was posted in a simple cabin (called a "radio shack" at the time) at what is now Meriwether Picnic Area at the mouth of Meriwether Canyon adjacent to the Missouri River. The mouth of Meriwether Canyon was the operational base for the fire guard who died in the 1949 fire, a major fire camp during the Mann Gulch fire, part of the rescue operations and a terminus for the trail leading into Mann Gulch.

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### Forest Trail #253 (contributing structure)

Forest Service trail #253, leading from Meriwether Picnic Area into Mann Gulch and the Gates of the Mountains Wilderness, was used by fire guard Jim Harrison and subsequent fire crews during the 1949 fire. The trail tread has been improved and some segments have been relocated, however, it remains the primary foot access into Mann Gulch (and is one of several access points into the Gates of the Mountains Wilderness). The river's swift current prevents commercial tour boats from landing at the mouth of Mann Gulch. It is currently used by Forest Service interpreters guiding hikes into wildfire site. In view of the trail's role in detecting and fighting the Mann Gulch fire, and in subsequent rescue operation, the trail is considered to be a contributing structure of the Mann Gulch Wildfire Historic District.

### 13 Concrete Crosses and 13 Granite Markers (26 non-contributing objects)

The concrete crosses and granite markers are non-contributing features because they are less than 50 years old.

### Meriwether Canyon Guard Station (non-contributing building)

In 1949, a fire guard was posted in a simple cabin (called a "radio shack" at the time) at what is now Meriwether Picnic Area at the mouth of Meriwether Canyon adjacent to the Missouri River. This cabin was removed and replaced by a more substantial structure in 1968. The current cabin has no historical link to the fire.

### Meriwether Picnic Area (non-contributing structure)

The Meriwether Picnic Area facilities were constructed in 1960. They have no historical link to the fire.

### Integrity

The Mann Gulch Wildfire Historic District appears much as it did following the 1949 fire. The south-facing hill slope in Mann Gulch, barren of trees except for burned stumps and dotted with white crosses, retains the wildfire identity for which it is significant. Rescue Gulch has likewise not been modified significantly by nature or human activities since 1949. The lack of recent timber growth within Mann Gulch reflects the severity of the 1949 fire and poor growing conditions (aridity, rocky soil). The Helena National Forest has actively protected the integrity of the Mann and Rescue Gulch areas since 1949. No management activities have occurred there and no facilities have been developed except for an interpretive sign at the gulch mouth. There are no plans to upgrade the informal trail into Mann Gulch. The firefighting and horseback-riding community has assisted the Forest Service in maintaining the concrete crosses and the new granite markers placed there in 1997. The Forest Service conducts regular guided tours into Mann Gulch and has developed a brochure (attached) to meet a steady public demand for succinct information about the wildfire. In 1993, Forest heritage specialists mapped and removed artifacts in the "cargo drop" area because these items were being removed by site visitors. Original agency records, maps and artifacts related to Mann Gulch will be archived at the Montana State Historical Society in 1999. In sum, these activities reflect the historical importance attached to the wildfire in Mann and Rescue Gulches and the preservation of this landscape.

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**8. Statement of Significance**

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Applicable National Register Criteria: A

Areas of Significance: Conservation

Criteria Considerations (Exceptions): NA

Period(s) of Significance: 1949

Significant Person(s): NA

Significant Dates: 1949

Cultural Affiliation: NA

Architect/Builder: NA

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**Narrative Statement of Significance**

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The Mann Gulch Wildfire Historic District is eligible for listing in the National Register of Historic Places under Criterion A. This District is associated with the Mann Gulch Wildfire, an event that led to significant changes in fire-fighting practices in the Northern Rocky Mountain region. The high loss of life at Mann Gulch by the newly-founded and elite Forest Service "smokejumper" corps was not anticipated based on its successful operations throughout the 1940's. The Mann Gulch wildfire disaster received both statewide—it had claimed the lives of six Montanans, including World War II veterans and university students—and national press coverage. In 1951, a Hollywood movie was loosely based on tragedy in Mann Gulch. The fire, together with several other wildfire tragedies in California (involving fewer casualties), led to a serious re-evaluation of Forest Service firefighting procedures. The Forest Service Board of Review for the Mann Gulch wildfire strongly recommended that the agency focus on firefighter training, safety procedures, and the study of fire behavior. These concerns resulted in a wide array of changes in firefighting and smokejumping, including more intensive team training, better equipment, and systematic consideration of fire behavior in wildlands firefighting.

The Mann Gulch wildfire retains a high degree of emotional attachment and historical significance to the Forest Service and its firefighting organization, to relatives of the deceased and surviving crew members, and to many Montanans. The fire drew national attention at the time of the disaster. It was popularized in the 1951 Century-Fox movie, "Red Skies Of Montana", starring Richard Widmark, Richard Boone, and Jeffery (Tab) Hunter. Smokejumping and firefighting (in which the Mann Gulch tragedy was described) were subsequently featured in a variety of television programs such as "Wild Kingdom". Smokejumping has likewise been the theme of numerous books; Norman Maclean's "Young Men and Fire" published in 1992 renewed public interest in how events unfolded in Mann Gulch. The wildfire disaster has been a regular August feature in Montana newspapers since 1949 (i.e., Schwarzmn 1979). The wildfire site continues to be studied by fire behavior researchers to help understand more recent fires that caused significant loss of human life, such as the South Canyon Fire in Colorado. Past and planned commemorative events at Mann Gulch, including its 50th anniversary in August, 1999, care and maintenance of the concrete crosses by the Forest Service and public alike, and regular public (local, national and international) visitation despite difficult access are all testimony to the importance of this cultural landscape.

**The Mann Gulch Wildfire**

Since its official inception in 1905, the USDA Forest Service has had a history of aggressive fire control, although its efforts were constrained by technology, forest fire remoteness, difficult access, and lack of trained personnel (Graves 1910; McArdle 1952; Pyne 1982). During its early history, the Forest Service relied on military forces to help fight fires. The disastrous fires of 1910, and technological advancements of World War I, accelerated innovations in forest fire protection. Aerial surveillance was initiated in 1917, and aerial drops of supplies to firefighting ground forces began in 1925 in the Northern Rocky Mountain Region (Region 1). Increasing sophistication in these aerial drops led to the controversial consideration of airborne firefighting forces through the late 1920's and most of the 1930's. The danger and impracticality of dropping men into heavy timber were the major stumbling blocks (although Germany and Russia had already developed



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parachuting troops). However, a successful parachute experiment in the state of Washington in 1939, and the persistent advocacy of Dave Godwin (1941), assistant chief of fire control in the agency's Washington Office, led in to the establishment of a small Forest Service "smokejumper" force in 1940 (USDA Forest Service 1980). The smokejumpers were rigorously trained in a variety of ever-evolving gear and equipment at smokejumper bases throughout the Pacific Northwest, including Missoula, Montana,

The smokejumper program almost came to a standstill during World War II, because the military was putting together its first parachuting corps and needed experienced jumpers and trainers. The program was kept alive using volunteers from the Civilian Public Service Program (CPS), many of whom were conscientious objectors (Cohen 1983). These jumpers fought fire throughout the Pacific Northwest, but were replaced when the CPS program was eliminated at the close of World War II. In 1946, a new smokejumper force was developed with young college students and World War II veterans. Training was completed at a variety of bases; in Region 1, a large pool of some 200 jumpers was stationed at Nine Mile Station (Camp Menard) near Missoula.

Following World War II, new airplane and parachuting technology (i.e., static lines, slotted chutes, headgear, jumper suits, radios) enabled smokejumpers to be dropped into remote fires with their equipment, rations and water (USDA Forest Service 1980). The firefighters could contain fires until ground reinforcements arrived. However, smokejumper crews were not trained as cohesive units and many had limited fire experience, particularly in the drier forests of central and eastern Montana. For all firefighters, communication was still limited to telephones (and party lines in many rural Ranger District offices) and two-way radios prone to overheating and burn-out (Gray 1982). These were some of the factors that played into events at Mann Gulch in 1949.

In June, 1949, four smokejumpers, including Bill Hellman who would die at Mann Gulch, brought recognition to this firefighting force by a successful jump between the White House and Washington Monument (Cohen 1983). This would be the high-water mark of a ten-year effort to establish the smokejumpers as a viable firefighting force in the Forest Service. However, the Mann Gulch tragedy in August of this same year necessitated that the Forest Service re-evaluate the safety, preparedness and understanding of fire behavior among its smokejumper and ground firefighting forces.

Fires occur regularly in the dry Big Belt Mountains of west-central Montana, averaging one significant fire every 13-25 years. In 1949, however, several years had passed without a fire and a dense stand of 60-100 year old Douglas fir and juniper covered the north-facing slope in Mann Gulch. The drier, south-facing slope had patches of similarly-aged ponderosa pine extending from the gulch bottom to the ridge line separating Mann and Rescue Gulches. This part of the Gates of the Mountains had been designated a "Wild Area" (a Wilderness-like designation at the time) by Congress and no livestock grazing had recently occurred here, resulting in a two to three foot high carpet of grass which covered the rocky, unstable slopes. The preceding summer of 1948 had been cool and wet with very few fires. August, 1949, was very different. Several weeks of hot, dry weather had dried out the vegetation in the Big Belts, making conditions ideal for a wildfire. On the afternoon of August 4, 1949, a storm system crossed the Continental Divide, producing some rain and many lightning strikes. Twenty-five lightning-caused "smokes" were sighted by Forest Service lookouts in the Big Belts, one of which sparked the Mann Gulch wildfire.

On August 5, 1949, fifteen firefighters parachuted into Mann Gulch in an attempt to control a wildfire. The Mann Gulch smokejumper crew was called to the fire at 1:30 pm by Helena National Forest Supervisor, Arnold Moir, and Canyon Ferry District Ranger, Robert Janssen, the latter having flown at noon over several lightning strikes including the one in Mann Gulch. Due to the fire's lack of access and remoteness, Moir and Janssen decided to bring in a smokejumper crew. Ranger Janssen then mobilized a ground crew to set up a fire camp at the mouth of Mann Gulch. However, because of the heavy demand on aircraft that day, the smokejumper base in Missoula was able to respond with only a single C-47 plane capable of holding sixteen firefighters and their gear. By mid-afternoon, a quickly assembled smokejumper crew was on its way to Helena. The crew was made up of sixteen men ranging from 19 to 33 years in age, and was led by an experienced

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jumper and World War II veteran, R. Wagner "Wag" Dodge. One smokejumper, Merle Stratton, was airsick due to turbulence and did not jump at the Mann Gulch fire. The backgrounds of the Mann Gulch smokejumper crew were:

<u>Name</u>	<u>Origin</u>	<u>Age</u>	<u>Experience</u>
Robert J. Bennett	Paris, TN	22	US Army veteran 3 seasons with FS 1st season smokejumping University student
Eldon E. Diettert	Missoula, MT	19	Non-veteran 3 seasons with FS 1st season smokejumping
James C. Harrison	Missoula, MT	20	Non-veteran 5th seasons with FS Fire guard University student
William J. Hellman	Kalispell, MT	24	US Navy veteran 5 seasons with FS 4th season smokejumping
Philip R. McVey	Babb, MT	22	US Navy Air Corps veteran 5 seasons with FS 2nd seasons smokejumping
David R. Navon	Modesto, CA	28	US Army veteran, paratroops 2 seasons with FS 1st season smokejumping
Leonard L. Piper	Blairsville, PA	23	US Navy veteran 2 seasons with FS 1st season smokejumping University student
Stanley J. Reba	Brooklyn, NY	25	Army Air Corps veteran 3 seasons with FS 2nd season smokejumping University student
Marvin L. Sherman	Missoula, MT	21	US Navy veteran 3 seasons with FS 1st season smokejumping
Joseph B. Sylvia	Plymouth, MA	24	US Marine Air Corps veteran 3 seasons with FS 2nd season smokejumping University student
Henry J. Thol, Jr.	Kalispell, MT	19	Non-veteran 2 seasons with FS 1st season smokejumping
Newton R. Thompson	Alhambra, CA	23	US Army Air Corps veteran 2 seasons with FS 1st season smokejumping City college student

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Silas R. Thompson	Charlotte, NC	21	US Army veteran, airborne 3 seasons with FS 2nd season smokejumping University student
*R. Wagner Dodge	Missoula, MT	33	US Coast Guard veteran 9 seasons with FS 8th season smokejumping
*Robert Sallee	Samuels, ID	20	Non-veteran 2 seasons with FS 1st season smokejumping
*Walter B. Rumsey	Garfield, KA	21	US Navy Air Corps veteran 2 seasons with FS 1st season smokejumping
*Survivors of the Mann Gulch wildfire			

The smoke on the ridge above Mann Gulch had also been spotted at 10:00 am that morning by the operator of the commercial boat tour in the Gates of the Mountains. He gave this information to fire guard, Jim Harrison, who was stationed at a guard station at the mouth of Meriwether Canyon. Harrison hiked up the trail, observed the fire, and returned to gather up his firefighting gear. Leaving a note on the cabin door stating "Gone to fire. Be back at 3:00 PM, Jim", he returned up the trail to Mann Gulch. Harrison, a smokejumper during the 1948 fire season, would eventually join the smokejumpers in Mann Gulch and die in the fire. Harrison had been out of contact with Ranger Jansson since their routine 8:15 am radio check. An hour after Harrison's departure to the fire, the fire lookout on Colorado Mountain saw smoke in Mann Gulch and officially reported the wildfire.

The Mann Gulch smokejumper crew reached the fire at 3:10 pm. Crew foreman Dodge and spotter, Earl Cooley, located a jump spot at the head of Mann Gulch after deciding against a site on the Mann Gulch and Meriwether Canyon ridge line in front of the advancing fire. The crew made the jump safely but the parachute on the cargo pack containing the crew's radio and other equipment failed to deploy and was destroyed (in 1993, some these artifacts were found, mapped and removed by the Forest Service to prevent artifact theft [Fairchild et al. 1993]). The gear was widely dispersed because the cargo drop was not made at the usual low altitude due to turbulence. Therefore, it took 50 minutes for the crew to gather and collect their gear at the cargo assembly area. At 5:00 pm, the crew ate lunch while foreman Dodge set out to locate Jim Harrison, who he heard yelling from the south ridge. Bill Hellman was left in command of the crew. During this same time period, Ranger Jansson, having established a fire base at Meriwether rather than Mann Gulch, tried to hike up the bottom of Mann Gulch to make contact with the jumpers, only to barely escape back to the Missouri River through the conflagration.

Dodge made contact with Harrison near the fire on the ridge line and both men set out for the cargo assembly area. They met Hellman and his crew heading up slope to the fire. At this point, Dodge was concerned about the fire on the south ridge and instructed his crew to head down the gulch to the rear of the fire and safety of the Missouri River. Dodge and Harrison then grabbed their water and lunch at the cargo drop and caught up with the crew heading down the gulch. At about 5:45 pm, Dodge discovered that the fire had "spotted" or jumped from the south ridge to the north slope and was burning rapidly in timber and grass, eliminating their escape route to the river. The crew then reversed its route, heading up the north slope to the ridgeline and Rescue Gulch, and away from the fire. Steep, rocky slopes and fingers of thick timber impeded progress and soon thereafter Dodge encouraged the crew to drop all heavy gear. At this point, fear and confusion played a deciding role. Some men dropped their gear but others held on to their packs, shovels and pulaskis. Foreman Dodge burned out a small area in the grass and encouraged the firefighters nearest him to get inside the fire-blackened safety zone. Either they did not hear or understand him, or chose to ignore his orders to get inside his "burn-out". The crew continued running diagonally along the slope rather than directly upward to the ridgeline. But the fire, advancing at a rate of 600 to 700 feet per minute and producing super-heated gasses, quickly overtook them.



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Smokejumpers Bob Sallee and Walt Rumsey were the only crew members who made it safely through the vertical rock ledges and then to a scree slope in Rescue Gulch. Twice fire burned over their escape area on the scree slope but they were unharmed. At about 6:15 pm, Foreman Dodge left the safety of his burn-out and located the severely burned Joe Sylvia. Leaving Sylvia on a large, flat rock (which can be identified today in Mann Gulch), Dodge went over the ridge into Rescue Gulch and found Rumsey and Sallee tending critically burned Bill Hellman. Leaving Rumsey to attend Sylvia, Dodge and Sallee hiked to the Missouri River, where they met a private boater who transported them to the fire camp at the mouth of Meriwether Canyon. There they met Ranger Jansson at 8:50 pm., who immediately radioed for medical help. By 9:00 pm, Jansson, Doctors T. L. Hawkins and R. E. Haines of Helena, and a rescue crew were on a boat headed for Mann Gulch. The rescue was conducted through the night and into the early morning of August 6. Ranger Jansson, Dodge, and the rest of the crew attended Sylvia and Hellman, who both died later in Helena hospitals, and located the remaining bodies on the burned mountain slope. On Sunday, August 8, 1949, a light rain helped some 450 firefighters contain the fire. On August 10, the fire was declared controlled after burning some 5000 acres of grass and timber and claiming the lives of thirteen young men.

The Mann Gulch wildfire disaster received immediate local, regional and national media attention. The Helena Independent Record, the Missoulian, the Great Falls Tribune, and the University of Montana's Montana Kaimin all closely followed the rescue, fire containment progress, and the Forest Service fire investigation that followed. In late August, 1949, the Mann Gulch story was aired in a radio broadcast of NBC's "Forest Aflame" series in Butte, Billings, Great Falls, Missoula, Boise, Twin Falls, Spokane and Seattle (Van Meter 1949). Life Magazine covered the story in August, 1949, and published photographs of the rescue and aftermath. The disaster was a shock to the Forest Service firefighting community and was discussed in forestry journals (i.e., Forbes 1949).

An official inquiry into the events surrounding the Mann Gulch disaster was convened in September, 1949. The Forest Service Board of Review (1949) was composed of high level Forest Service officials and was closed to the press and public. All of the principal people involved with the fire were questioned, including Ranger Jansson who testified on the condition that he be allowed to face away from the reviewers; Jansson felt great sorrow and personal responsibility for the events at Mann Gulch (Jansson n.d.). The Board concluded that no one was directly responsible for what transpired at Mann Gulch. Wag Dodge, Ranger Jansson, and Forest Supervisor Moir were exonerated based on the Board's judgement that each man was ultimately responsible for his own course of action during the final moments of the fire. Since it remained unclear as to why the fire spotted from the south to north ridge, the Board recommended intensified study into fire behavior as a way to anticipate and predict future fire "blow-ups". They also recommended better firefighter training. The findings of no fault on the part of the Forest Service received criticism from some of fire victim's (a lawsuit was unsuccessfully brought against the Forest Service), and later by author Norman Maclean (1992).

In November of 1949, pioneer wildfire behavior researcher, Harry Gisborne, visited the Mann Gulch wildfire site with Ranger Jansson. Gisborne was convinced that the causes of forest fires could be reasonably predicted with systematic study and fire preparedness (Hardy 1983). Troubled by a heart condition, Gisborne died of a heart attack in Mann Gulch; the wildfire had indirectly claimed its 14th victim. The cause of the fire's behavior and firefighter reactions at Mann Gulch remain a subject of study and debate, particularly in relation to more recent fire disasters such as the 1994 South Canyon Fire in Colorado (i.e., Wiecke 1993; Putnam 1995).

The Mann Gulch wildfire is described in a variety of documents. The official Forest Service Board of Review (1949) which investigated the tragedy is the most pertinent historical account. Books and diaries (Cooley 1984; Jansson n.d.; Maclean 1992), technical reports (USDA Forest Service 1980; Hardy 1983; Rothermel 1993; Putnam 1985), and agency letters, memoranda and papers provide a larger context for the event. In 1998, Helena National Forest employee, David L. Turner, who has led numerous guided hikes into Mann Gulch, prepared a interpretive narrative of the event (Turner 1999). During fall, 1999, members of the X-CEL class at Helena High School in Helena, Montana, used these various primary and secondary sources and oral interviews with surviving participants and relatives of the deceased firefighters to prepare this

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nomination. The students found subtle differences of fact and interpretation among these sources. Only the basic outline of events at Mann Gulch is presented here.

Effect of Mann Gulch Wildfire on Firefighting Practices

The Mann Gulch fire was the thirteenth of some eighty-three fires reported in the Helena National Forest fire log for 1949 (one half of these fires were on private rather than National Forest land). In fact, Helena National Forest officials were initially more concerned about the York Fire blazing in the Big Belts near a small rural community than with the Mann Gulch fire. The fire season was more intense than in the several preceding years but certainly no worse than the 1940 or 1946 seasons. The 1949 season was exceptional throughout the Forest Service primarily because of the Mann Gulch wildfire and the heavy loss of life during a single, apparently routine fire. Never before had such loss of life been inflicted on the Forest Service's elite smokejumpers force. The horrific fires that swept across the Pacific Northwest in 1910 had destroyed millions of acres of forest land and killed at least 80 people but this happened before the Forest Service had developed a firefighting organization and well before the advent of smokejumping. Later fires, airplane crashes, and accidents would incrementally take their toll of firefighter lives. But Mann Gulch was the warning bell within the Forest Service that even an effective firefighting force such as the smokejumpers was no match for the unpredictable fury of a wildfire. More precautions and safety were needed.

Each year thousands of men and women commit their energy and lives to fighting wildfires. The equipment, safety measures and understanding of wildfire behavior that buffers these firefighters from potential disaster can be traced back to tragedies such as Mann Gulch. Following the Mann Gulch Board of Review's recommendations, more intensive training was provided to smokejumpers and all wildfire fighters in the 1950's and continues today. This evolution in training is clearly illustrated by comparing the fire prevention sections in Forest Service manuals dating prior to and after 1949. The Mann Gulch smokejumper crew was quickly put together to respond to a small fire on the Helena National Forest. Some of the crew members did not know each other and no one but Bill Hellman was well acquainted with the crew foreman, Wag Dodge. In fact, the smokejumpers worked out of a rotating pool of some 150 men. They were not trained or dispatched to fires as established crews. As a consequence, the crew sent to Mann Gulch lacked a clear identity and cohesiveness which probably played into individual crew member decisions during the final moments of their attempted escapes (Weick 1993). Whether the crew members did not hear Dodge, understand his instructions, or simply refused to trust in their assigned crew leader's judgement in using a burn-out or escape area is unknown. However, in contrast, today's firefighting crews are trained under a specific command structure and work together all season in fire and non-fire related activities. The obvious purpose is to engender greater crew cohesiveness and communication than that exhibited at Mann Gulch.

The Mann Gulch fire and several other fires where several casualties were incurred during the same time period led to increased concern for basic firefighter survival. As a fledgling firefighting unit, most smokejumpers of the Mann Gulch time period had relatively limited experience in fighting fires, especially east of the Continental Divide. As a consequence, some fire experts speculate that the "flashy" nature of east-side timber and grass fuels was under appreciated by the Mann Gulch crew. This unfamiliarity may help explain why the crew selected the grassy slope leading to Rescue Gulch as one of two designated escape routes. Firefighters and smokejumpers are now trained to respond to a wide range of local conditions, fuels, terrain and weather patterns.

The Mann Gulch fire also re-emphasized the need for safety zones and routes—areas comparatively free of danger that allow firefighters to escape if a fire "blows ups." The two escape routes in Mann Gulch—down the slope to the Missouri River and the rock slide below the ridge in Rescue Gulch—weren't easy to access and were too far apart. No alternatives between the two were available. Once the escape route to the river was on fire, the crew was left to scramble up a very steep (75 percent), rocky slope. Dodge and his crew had scouted the area and had formed a general escape plan but apparently did not consider all of the conditions (flashy fuels, aridity, steep slope, 97 degree temperatures) present at Mann

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Mann Gulch Wildfire Historic District  
Lewis and Clark County, Montana

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Gulch. Even on small, routine fires, escape plans are carefully developed thanks to the hard lesson learned at Mann Gulch and similar fire disasters. Coupled with better communication systems (the Mann Gulch smokejumper crew had only one radio where today every firefighter carries a hand-held radio), strategic and tactical firefighting planning has eliminated some of the fire unpredictability described in the Mann Gulch Board of Review's report.

Despite the controversy surrounding Wag Dodge's use of a fire-blackened burn-out, it is one of first documented uses of this survival technique in the history of Forest Service firefighting. A burn-out (also called an "escape fire") is an area where vegetation has been previously burned (either by a wildfire or deliberately by firefighters) and no fuels are available during a forest fire. By lying face-down in the pre-burned area, a firefighter can breathe the remaining oxygen close to the ground as the fire burns around this safe area. Dodge's use of a burn-out caught the attention of the Mann Gulch Fire Board of Review and it soon became a mandatory training topic.

The Mann Gulch wildfire tragedy brought to fruition a twenty-year effort by Harry Gisborne and a handful of other pioneer fire researchers to establish a program of systematic study of forest fire behavior (Hardy 1983). The Forest Service Fire Laboratory in Missoula, Montana, was created in the wake of the Mann Gulch wildfire (Rothermel 1993). In the years following the Mann Gulch event, Forest Service fire centers in Montana and Colorado focused attention on fire behavior and the development of safer firefighting gear and equipment. These improvements ranged from fire retardant clothing, helmets and hardhats, to reflective metal-coated fire shelters which enable firefighters to survive burn-overs similar to the one experienced at Mann Gulch. Parachutes are now sized to make the drop rate similar for people with different weights; net webbing was added to the bottom of the chute to prevent it from opening the wrong way. The study of fire is so important that trained "fire behavior specialists" are now standard members of all fire incident command teams. The funnel-shape of Mann Gulch creates a suction-effect during high winds. Since flames travel faster upward than downward (the same effect as holding a burning match upside down), the Mann Gulch fire was literally sucked up the gulch, eventually producing its own wind and super-charged gases. If this information had been available in 1949, it is unlikely that smokejumpers would have been dropped at the head of Mann Gulch. In fact, fire researcher Harry Gisborne's legacy at Mann Gulch is pioneering efforts to include the study of wildfire behavior as a essential component of all wildlands firefighting.

Ultimately, Mann Gulch and a handful of other wildfires dating to this time period ushered in a new era of firefighting focused on "safety first"—know fire conditions and commit only well trained and prepared firefighting crews to front-line action. The ten Standard Fire Orders adhered to today are not the single product of the Mann Gulch fire. They were developed after World War II but reflect the military background of the Forest Service and firefighting workforce of that era. They have evolved over time and are a useful measure of changes in firefighting since Mann Gulch:

- Fight fire aggressively but provide for safety first.
- Initiate all action based on current and expected fire behavior.
- Recognize current weather conditions and obtain forecasts.
- Ensure instructions are given and understood.
- Obtain current information on fire status.
- Remain in communication with crew members, your supervisor and adjoining forces.
- Determine safety zones and escape routes.
- Establish lookouts in potentially hazardous situations.
- Retain control at all times.
- Stay alert, keep calm, think clearly, act decisively.

The hard lessons learned at Mann Gulch, as reflected in the current Standard Fire Orders, are taken to heart by all Forest Service wildlands firefighters and smokejumpers. For this reason, thirteen men did not die in vain at Mann Gulch.



Mann Gulch Wildfire Historic District  
Name of Property

Lewis and Clark County, Montana  
County and State

## 9. Major Bibliographic References

See continuation sheet

### Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested.
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # \_\_\_\_\_
- ☐ recorded by Historic American Engineering Record # \_\_\_\_\_

### Primary Location of Additional Data:

- ☒ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☒ Other - Specify Repository:  
Helena National Forest Supervisor's Office, Helena  
USFS Region 1 Aerial Fire Depot, Missoula

## 10. Geographical Data

Acreage of Property: 1,195

UTM References: Zone Easting Northing

See Continuation Sheet

Legal Location (Township, Range & Section(s)): See Verbal Boundary Description

### Verbal Boundary Description

See Continuation Sheet

### Boundary Justification

The boundaries of the Mann Gulch Wildfire Historic District are defined to include all major landscape features involved in the main human events of the Mann Gulch wildfire. The majority of the 1,195 acre district encompasses Mann Gulch where the smokejumpers were dropped, scouted the fire, met up with fire guard Harrison, attempted to escape the conflagration, lost their lives and/or were later rescued. It includes the ridge at the head of Mann Gulch where some of the rescue operation (helicopter landing) were conducted. Small parts of the adjoining Meriwether Canyon and Rescue Gulch are also included because of the role each played in the initial fire discovery and later fire containment and rescue operations. The district represents about 24 percent of the total acres burned (ca. 5000) by the Mann Gulch wildfire. The growth of trees and vegetation outside of this "core area" has obscured the visible effects of the 1949 wildfire and, in any case, these are areas peripheral to the main human story at Mann Gulch for which the site is historically significant.

## 11. Form Prepared By

name/title: Carl M. Davis, Forest Archaeologist, David L. Turner, Recreation Forester, and Helena High School X-CEL class members: Stephanie Abraham, Nate Boyd, Dana Deininger, Greg Dorrington, Ashely Finnegan, Jenny Gambill, Allyson Hamill, Tanner Jackson, Martin Kuhl, Kurt Michels, Mac Mulette, Heather Paulson, Valerie Platta, Monty Schindler, Kim Tallent, Karolina Topolski, Nate Warner, and Chrystal Warinski. Rod Boyer and Lee Holmes, X-CEL class instructors, Helena High School, Helena, Mt.  
organization: USDA Forest Service, Region 1, Helena National Forest date: March 17, 1999  
street & number: 2880 Skyway Drive telephone: (406) 449-5201  
city or town: Helena state: MT zip code: 59601

### Property Owner

name/title: USDA Forest Service, Region 1, Helena National Forest  
street & number: 2800 Skyway Drive telephone: (406) 449-5201  
city or town: Helena state: MT zip code: 59601



United States Department of the Interior  
National Park Service

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National Park Service

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UTM References:	Zone	Easting	Northing	
A	12	431680	5190880	Mouth of Meriwether Canyon, Picnic Area in Section 19
B	12	432020	5193740	Intersection of Trail #253 and Gates of the Mountains Wilderness boundary in Section 8
C	12	431800	5193740	Intersection of wilderness boundary and Section 7 and 8 section line
D	12	431800	5193340	Southeast corner of Section 7
E	12	429820	5193340	Intersection of section line and Holter Dam-Missouri River in Rescue Gulch

## Verbal Boundary Description

The Mann Gulch Wildfire Historic District encompasses:

SW 1/4, SW 1/4	Section 8, Township 13 North, Range 2 West
SW 1/4, SE 1/4	Section 8, Township 13 North, Range 2 West
NW 1/4	Section 17, Township 13 North, Range 2 West
SW 1/4	Section 17, Township 13 North, Range 2 West
NW 1/4, NW 1/4,	Section 17, Township 13 North, Range 2 West
All	Section 18, Township 13 North, Range 2 West
NE 1/4	Section 19, Township 13 North, Range 2 West
NE 1/4, NW 1/4,	Section 19, Township 13 North, Range 2 West
NW 1/4, NW 1/4	Section 20, Township 13 North, Range 2 West
NE 1/4, NE 1/4,	Section 13, Township 13 North, Range 3 West
NE 1/4, SE 1/4,	Section 13, Township 13 North, Range 3 West

The Mann Gulch Wildfire Historic District is an inverted triangle in shape, with its apex (UTM reference #1) at the mouth of Meriwether Canyon/Meriwether Picnic Area in Section 19. From Meriwether Picnic Area, the east boundary of the district follows Forest Service Trail #253 (marked "pack trail" on topographic maps) in a northeast-southwest bearing along the ridge line separating Meriwether Canyon and Mann Gulch in Sections 17 and 20. The trail intercepts the head of Mann Gulch at the Gates of the Mountains Wilderness Boundary in Section 8 (UTM reference #2). From this point, the district boundary extends along the wilderness boundary for 3/4 mile to the section line dividing Sections 7 and 8 (UTM #3). The boundary then turns south for 1/4 mile to the southeast corner of Section 7 (UTM reference #4). The boundary then follows the section line for 1.25 miles to its juncture with the Holter Lake/Missouri River at the mouth of Rescue Gulch (UTM reference #5). The west boundary follows the shoreline of Holter Lake/Missouri River southward through Sections 18 and 19 to its terminus at the mouth of Meriwether Canyon and Meriwether Picnic and Area (UTM reference #1).



Figure 3—Mann Gulch 2 weeks after the 1949 fire. The firefighters' route from their landing site to Dodge's fire is shown by the dashed line.

*(from Rothermel 1973)*



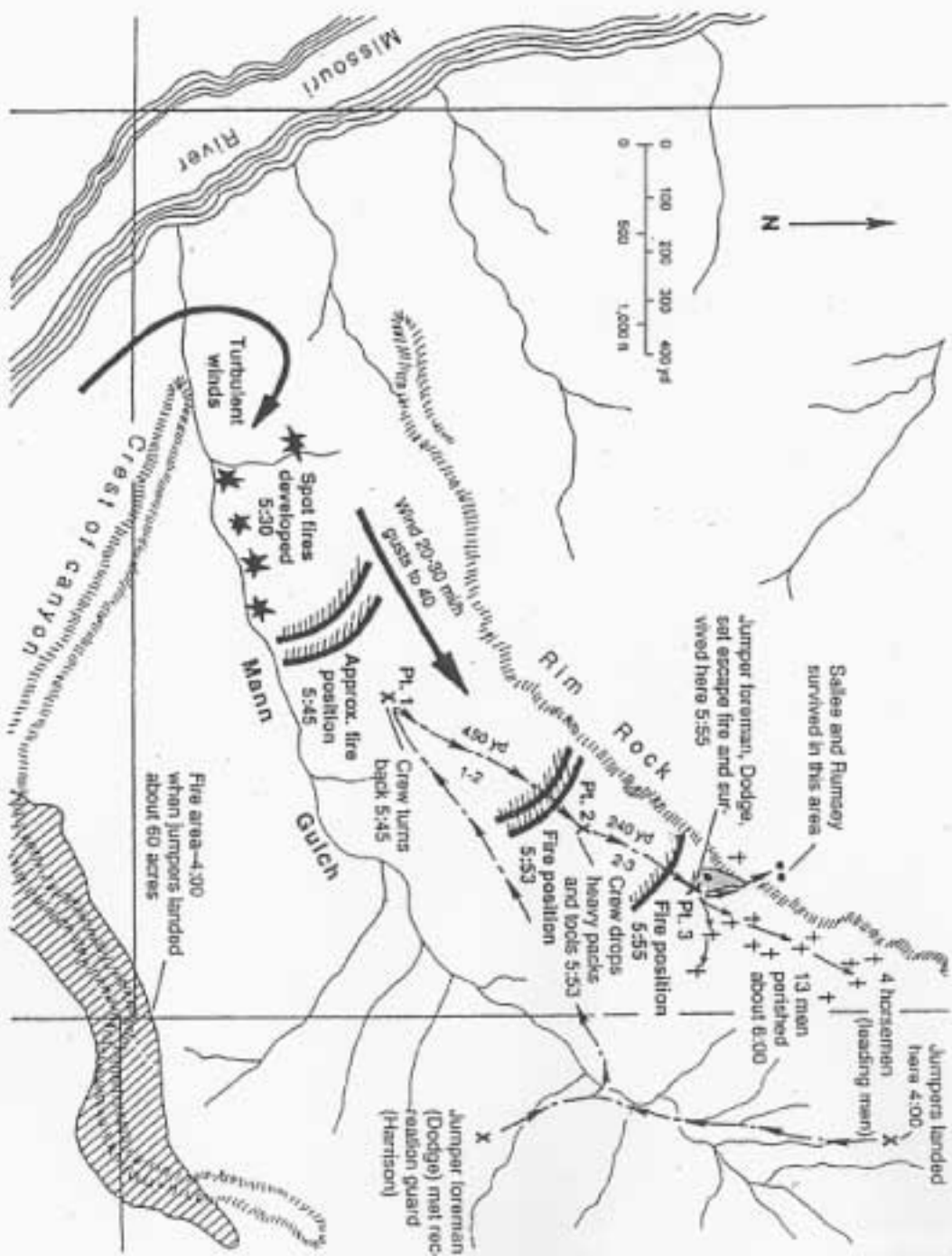
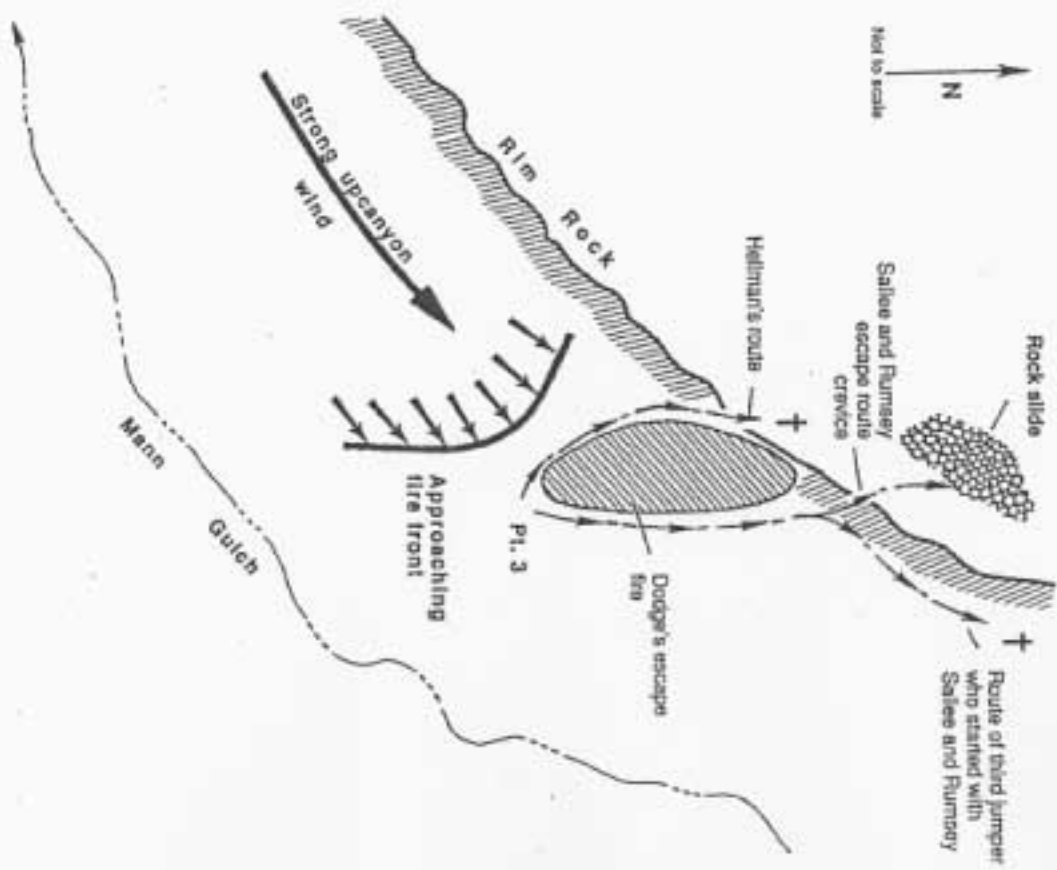


Figure 1—Map of Mann Gulch illustrating the movement of the crew and the position of the fire as it approached the crew at points (pl.) 1, 2, and 3. (*from Ruthven 1993*)



**Figure 4**—The paths of crew members who lied around the escape fire Dodge ignited at point (pl.) 3. Saltee and Runsey survived; Hellman did not. (from Rothman (1993))

1. Mann Gulch Wildfire Historic District  
Mann Gulch, tributary of Missouri River, Helena National Forest

2. Lewis and Clark County, Montana

3. Nat Tucker

4. 1997

5. Helena NF Supervisor's Office, Helena, MT

6. Description:

#12 View west of upper end of Mann Gulch and below ridgeline separating Mann and Rescue Gulches. In area where firefighters bodies were recovered. Note lack of new tree growth in area.

#13 View south from upper end of Mann Gulch looking toward Missouri River/Holter Lake and ridgeline separating Mann Gulch and Meriwether Canyon. In area where firefighters bodies were recovered.

#14 View northwest at upper end of Mann Gulch, at pack string bringing in new granite monuments to be set beside the concrete crosses. Ridge separates Mann and Rescue Gulches.

#15 Concrete cross and granite monument of Henry J. Thol Jr. below ridgeline separating Mann and Rescue Gulches.

#16 Forest Service interpretive sign at mouth of Mann Gulch adjacent to the Missouri River.